

Accelerator Systems Division Highlights Ending July 29, 2005

Installation

Craft Snapshot 7/1905

| | |
|-------------------------------|------|
| ASD productive craft workers | 63.0 |
| Foremen (Pd by 15% OH) | 7.0 |
| AMSI management (Pd directly) | 3.0 |
| TOTAL AMSI WORKERS | 73.0 |
| Less WBS 1.9, 1.2 etc | 11.0 |
| Less absent | 7.0 |
| TOTAL PD BY ASD/ORNL DB WPs | 45.0 |

Accelerator Physics

Operations

- Completed the Pre-Start Accelerator Readiness Review Action Items for commissioning CCL4 and the SCL
- Conducted the Accelerator Readiness Review Pre-Start Closeout Video Conference
- Completed the SNS Declaration of Readiness to Commission CCL4 and the SCL
- Received permission from DOE to Commission CCL4 and the SCL
- Began Commissioning CCL4 and the SCL

Ion Source

- Monday night, lens 2 voltage dropped to almost zero due to drawing excessive current. The problem was located in a chopper box. Both chopper boxes were removed and normal operation was quickly restored. A follow-up inspection showed that a capacitor of the channel B voltage monitor failed.
- On Thursday we installed the chopper boxes from the test stand to enable chopper operations. This will also test the 1 nF capacitors, which were installed, because the original 2 nF capacitors were no longer available. In addition it gives us time to fully understand the capacitor failure and to find a sound solution.

Survey and Alignment

- Re-align SCL QH00 (LEDPS) optically (second optical re-alignment)
- Monthly RTBT subsidence monitoring completed
- Approximately 160 Rad-hard RTBT quad bolt holes set out
- BL2 guide mapping completed
- BL4 cave points set out and elevations marked
- 30Q mapping station set up completed
- 30Q58_01 optically set
- 21Q40_47 coupled with corrector DCV041
- 21Q40_36 coupled with corrector DCV037
- S & A's campaign for measuring the Linac was completed 18 July 2005. Data adjustments are proceeding well.
- Network calculations are complete and we are now in the process of fitting the component data to the new network.
- BL2 chopper stand location set out in CLO shop area
- 2 Brunson transits field calibrated

Mechanical

Magnets

- We sent a 21Q assembly to the tunnel and another is ready to go.
- We finished mapping the first of four 30Q's.
- We checked the polarity of SCL Magnets.

Water Systems Installation

- The Injection Kicker magnets' cooling was completed for operation.
- The Ring SB Power Supply cooling system was made operational and pressure/flow adjustments are in progress.
- The Ring Service Building Magnet cooling skid pump #1 is still at the vendor for repair.
- Fabrication of the RTBT/Target Quad cooling manifold was started.
- Preventative Maintenance on the Linac water systems continued.

Ring Systems Installation

- The HEBT Truck entrance shield blocks were secured and locked for operation.
- The HEBT Collimator and Momentum Dump closed loop cooling systems were filled and operated.
- The HEBT beamline scrapers' (10 units) operational testing was completed.
- The HEBT tunnel was cleared of all extraneous items and prepped for operation.
- The HEBT chicane shield wall fire proofing continued
- The Ring collimator SS QMM diagnostic was set in position.
- The Ring collimator SS beamline vacuum chambers were staged for installation.
- The Ring extraction kicker #1 seals were installed and the grounding verified.
- The RTBT/Target Duratek shielding block removal continued.

Electrical

- Last week, a problem was discovered with SCL-Mod18 which likely was a result of drift in the IGBT drive cards. After repairing, we went through the entire klystron gallery and measured the fluxes of all modulator transformers. SCL-Mod15 was discovered to also be in hard saturation, a condition which would have inevitably resulted in the destruction of more IGBTs. We were able to repair it after careful measurements of the drive card performance. We also lost the gate circuit on one of the IGBTs on DTL-Mod3.
- Started testing of 8 Ring Injection Kicker Magnet Power Supplies
- Started Terminations of 6 Injection Septum Magnets
- Pulled ¾ of the Ring BPM cables
- Completed all Linac/HEBT Installation activities

HPRF

Ring RF

- I&C Controls/Timing wiring in the Ring RF Control room has been installed.
- High power RF waiting for AC power

LLRF

Cryo Systems

Controls

- The Ring HPRF MPS interface chassis has been tested at BNL using the MPS test fixture at BNL. The MPS interface chassis has since been shipped to ORNL. Since no further MPS interface testing is required for any equipment developed at BNL, the BNL MPS test fixture, which includes a complete timing master, is being disassembled for shipment to ORNL.
- Support for Target controls startup continued. Target cooling loop valve positioners were calibrated. Problems remain with 4 (out of 28) of these and ongoing efforts are being made to get them working and calibrated. A temporary Ring Injection Dump IOC is now up and running. Updated versions of EDM screens and PLC program for the target cooling loops have been downloaded from the Tullahoma file server and loaded on the target file server and PLC. The target systems alarm handler configuration file was updated and is being set up for use to support integrated testing of the target cooling systems.
- An upgrade of the V124 timing decoder boards was completed for linac RF control systems. This upgrade fixes an old firmware bug and eliminates the risk of crashing the IOC if the timing system is turned off.
- The HEBT collimator water skid controls were checked out and the skid is now running.
- Installation of the PPS Ring access control system continued in preparation for Ring magnet testing. PPS field wiring in the Ring has been completed. UPS power is connected to the Ring service building PPS racks. Test and checkout for the PPS Ring access control system has begun.

Beam Diagnostics